

## InP/GaAsSb HBT MMIC for W-Band, Phase I

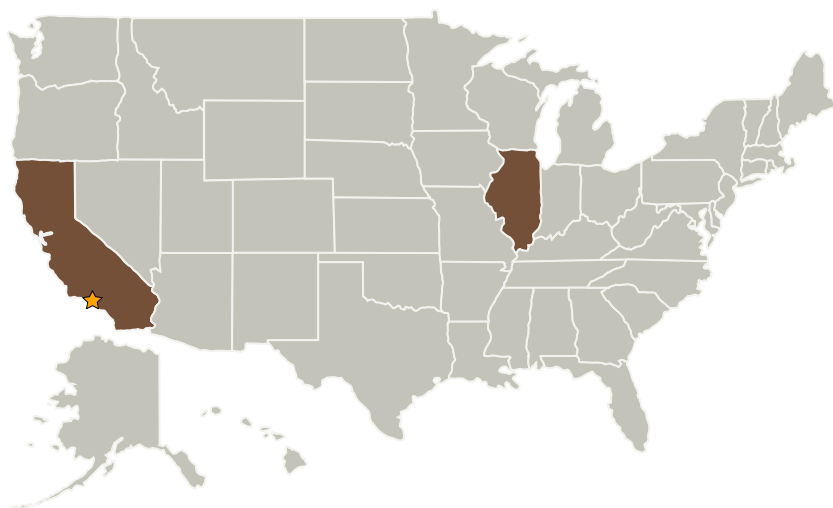
Completed Technology Project (2005 - 2005)



## Project Introduction

High-speed devices using InP play a critical role in the realization of power amplifiers for wireless and optical communication systems. Current gain cut-off frequencies in excess of 200 GHz have been demonstrated for InP HBTs, indicating the potential of these devices for use in high bandwidth communication systems and high-speed direct digital synthesizers. To achieve a higher output power and higher efficiency, InP HBT based on GaAsSb base layer is proposed in this research effort. This novel material technology offers the highest potential to achieve the highest output power and efficiency at W-band. We would like to achieve at least 1W of output power at W-band with at least an efficiency of 40%.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
MicroLink Devices, Inc.	Supporting Organization	Industry Minority-Owned Business	Niles, Illinois



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Jet Propulsion Laboratory (JPL)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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### Primary U.S. Work Locations

California

Illinois

### Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Noren Pan

### Technology Areas

**Primary:**

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - └ TX05.2 Radio Frequency
    - └ TX05.2.2 Power-Efficiency